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Proceedings of the Botanical Club A. A. A. S., Toronto Meeting,  
August 29th to September 3rd, 1889.

THURSDAY, AUGUST 29th.

The first meeting was held in the lecture room of the Biological Hall of the University of Toronto at 9 A. M., Prof. T. J. Burrill, Chairman, Dr. Douglas H. Campbell, Secretary.

Mr. Thos. Meehan read a paper on "The fertilization of *Hypericum Canadense*," maintaining that the plant is self-fertilized.

Dr. E. Lewis Sturtevant remarked that in the common pea (*Pisum sativum*) the pollen often meets the pistil before the flower opens, and that the English bean (*Faba vulgaris*) while blooming heavily at Geneva, N. Y., forms but few pods.

Hon. David F. Day stated that the Rose Acacia (*Robinia hispida*), while blooming freely in the vicinity of Buffalo, rarely produced pods, and he had observed that the anthers were commonly devoid of pollen.

Prof. Halsted stated that he had recently experimented on the common barberry (*Berberis vulgaris*) by covering a number of the racemes with paper bags, and in no case where the protection was complete were berries produced.

Mr. Coville said that in *Lupinus perennis* the pollen was often shed on the pistil before the latter was in a receptive condition.

Mr. Meehan read a paper on "The Cleistogamy of *Cerastium nutans*," which he had observed constant in many plants growing in the vicinity of Philadelphia, and that it was indicated in all the specimens contained in the Philadelphia Herbarium. His observations were confirmed by Judge Day and by Mr. C. F. Wheeler. Dr. Britton remarked on the frequency of apetalý in the Caryophyllæ. Mr. Coville stated that *Draba verna* is certainly cleistogamous in winter in the vicinity of Washington.

Prof. Halsted read a paper describing his detailed observations on the pollen of *Pontederia cordata*, containing the study begun by Mr. Wm. H. Leggett. Prof. Halstead described also the explosive dehiscence in the legumes of the bean known as *Phaseolus diversifolius*, stating that in the elastic coiling of the valves the seeds were expelled to a considerable distance. Dr. Britton remarked that this was a quite constant feature in the tropical species of the genus, as well as in some related genera;

also that this plant is certainly the *Phaseolus helvolus* of Linnæus, the species being incorrectly named in the manuals.

Mr. M. B. Waite described the elastic dehiscence of the pods of the several native species of *Viola*.

Dr. Britton exhibited and remarked on a number of additions to our native American flora.

Prof. Burrill exhibited a large collection of gelatine cultures of bacteria, prepared by Dr. Roswell Park of Buffalo.

In the afternoon the members participated in a field excursion at Scarborough Heights, tendered by the citizens of Toronto to the Section of Biology. This was an extremely enjoyable experience, and many interesting plants of the region were collected.

#### FRIDAY, AUGUST 30th.

Mr. F. V. Coville read a report of the work accomplished by the Botanical Division of the United States Department of Agriculture during the past year, and on motion, and unanimously carried, this report was referred to a committee consisting of the Chairman, Hon. D. F. Day and Professor Macoun, and this committee was requested to draw suitable resolutions expressive of the approbation of the Club.

Professor Macoun remarked on the present state of botanical work in Canada, dwelling especially on the extremely large collections brought together by himself and his colleagues during the past ten years, and offering to send to any specialist all the material at his command, on condition that it be critically examined and determined. He expressed his conviction that it is only by the work of investigators in limited fields of research that satisfactory results can be reached in the definition of the North American flora.

Dr. Britton exhibited specimens of a Siberian Labiate, *Elscholtzia cristata*, collected by Dr. John I. Northrop on the gravelly shore of Notre Dame du Lac, Termiscouata County, Quebec, in 1887 and again the present year, under conditions indicative of its naturalization at that point. He also remarked on the work of Dr. Thos. Morong in exploring the little known flora of Paraguay, stating that Dr. Morong was now on the upper waters on one of the larger rivers, prosecuting his researches under the most favorable circumstances. It was resolved that

the compliments of the Club be tendered to Dr. Morong, together with a statement expressing its appreciation of his work, and the Chairman and Secretary were appointed a committee to draft such resolutions.

Professor W. J. Beal described his observations on the conjugation of *Mesocarpus pleurocarpus*.

Professor Burrill remarked on the germinating spores of the Ustilagineæ.

Dr. Douglas H. Campbell exhibited and remarked on chlorophyll in the embryo of *Celastrus scandens*, also detected by Professor Halsted. Dr. Britton alluded to his observation, already recorded, of chlorophyll in the pith of *Phoradendron flavescens*, and as a further illustration of the development of chlorophyll in but little light, stated that he had observed on one of the lower levels of the Dickinson Iron Mine, New Jersey, a vine of the lima bean, germinated and grown there by one of the workmen to the length of at least eight feet, and containing abundant chlorophyll. The vine was continuously exposed to candle light. Dr. Campbell described also his studies in the nuclear division of the mother-spores of the pollen grains in *Podophyllum* and *Allium*, with his methods of staining, and illustrated his results by drawings. He further remarked on the cultivation of aquatics in the laboratory.

Professor J. C. Arthur described his management of a south exposure in a botanical laboratory.

#### MONDAY, SEPTEMBER 2d.

A meeting was held at 9 A. M. in the cabin of the steamer "Nipissing," on the Lakes of Moskoka, most of the Club having participated in the excursion to these lakes, tendered to the Association by the Local Committee. The President occupied the chair, and Mr. Henry Farquhar was elected Secretary, in the absence of Dr. Campbell.

Mr. Meehan described the development of the inflorescence in *Corydalis sempervirens*.

Reports were then made by several members on the botanical results of the Moskoka excursion, a complete account of which will subsequently appear in the BULLETIN.

A meeting was also held at the same time in the room of the

Biological Section at Toronto; Professor Bessey was elected President *pro tem*, and Professor Arthur, Secretary.

TUESDAY, SEPTEMBER 3d.

The Club met in the room of the Section of Biology, the President in the chair, Professor Arthur, Secretary.

The Secretary stated that on account of necessary expenditures for postage and stationery, a debt of about four dollars had been incurred; this was at once liquidated by voluntary subscriptions and the announcement made of a gratifying surplus.

Remarks were made by several members as to the desirability of a permanent record of the minutes of the Club, and the Secretary was requested to cause such record to be made in the book already provided for the purpose.

The Committee on nomination of officers for the next meeting, consisting of Hon. David F. Day, Prof. C. E. Bessey and Mr. F. V. Coville, reported as follows: President, Dr. N. L. Britton, of New York; Vice President, Prof. F. L. Scribner, of Knoxville; Secretary, Prof. C. R. Barnes, of Madison.

The nominees were unanimously elected.

The committee appointed to consider Mr. Coville's report on the condition of botanical work at Washington, reported as follows:

Having been informed of the action and encouraging work of the Botanical Division of the United States Department of Agriculture, we take great pleasure in expressing our high appreciation of the important work already accomplished and in the extensive undertakings in progress. The recognition by Congress of the importance of this botanical work, manifested by liberal appropriations of money, make possible, for the first time in America, adequate scientific and practical researches upon native and introduced plants—in health and disease—upon which the wealth of the country so largely depends, and in which is centered the highest educational and æsthetic interests.

We heartily commend the management of the Botanical Division and the Section of Vegetable Pathology, by those now in charge, and cheerfully express our readiness to aid them in any and every possible way.

T. J. BURRILL,  
DAVID F. DAY,

*Committee.*

The report was unanimously accepted, and adopted as the expression of the Club.

The committee appointed to draft resolutions expressing the appreciation by the Club of the botanical explorations now being

made by Dr. Thos. Morong in South America, reported as follows :

RESOLVED : That the compliments of the A. A. A. S. Botanical Club be sent to Dr. Thomas Morong, now making botanical collections in unexplored regions of South America, and that we tender to him an expression of our warmest interest in, and hearty appreciation of his arduous but highly promising labors in the new fields of his choice. We sincerely hope he may in due time return with health and strength, burdened only by abundant success and large contributions to the known flora of the world.

T. J. BURRILL,  
DOUGLAS H. CAMPBELL,  
*Committee.*

To DR. THOMAS MORONG,  
Ascuncion, Paraguay, South America.

The report was accepted and the Secretary requested to transmit a copy to Dr. Morong.

Mr. Coville reported the satisfactory progress of the operations of the Botanical Exchange Club under the direction of the National Herbarium. He stated that there were at present about twenty members. Over three thousand specimens had been received since the establishment of the Club two years ago, and a somewhat less number distributed.

Professor Joseph F. James read a paper on the value of color in plants as a character for classification, which will appear in a subsequent number of the BULLETIN, together with some additional memoranda relative to the same subject.

The committee appointed to draft resolutions expressive of the gratitude of the members of the Club to the members of the Local Committee for their uniform kindness and courtesy during the meeting, reported as follows :

WHEREAS : The Botanical Club of the A. A. A. S. having been most cordially and generously entertained by the citizens of Toronto, and

WHEREAS : The excursions tendered by the Local Committee of Toronto to the members of the Association have been especially enjoyed by the botanical members thereof, who have thus been enabled to visit points of especial interest :

*Resolved,* That the members of the Botanical Club extend their hearty thanks to the Local Committee for the arrangements made for their comfort and pleasure during the meeting of 1889.

N. L. BRITTON,  
WM. H. SEAMAN,  
JOSEPH F. JAMES.  
*Committee.*

The report was unanimously accepted.

The following resolution offered by Professor Bessey was adopted :

*Resolved.* That the Botanical Club of the A. A. A. S. notes with great pleasure the liberality shown by the Canadian Government in providing the admirable new building and equipment for the Biological Department of the University of Toronto, and ventures to hope that at an early day the facilities here provided may be extended to include a suitable Botanic Garden, to which end the members of the Botanical Club pledge such assistance as may lie in their power.

The Club then adjourned to meet next year at Indianapolis, Ind., on the third Wednesday of August, 1890, at 9 o'clock A.M.

The following botanical papers were read in the Section of Biology, under the Vice-Presidency of Professor Geo. L. Goodale :

On the position of the nectar glands in *Echinops*, by Thomas Meehan.

On the epigynous gland in *Diervilla* and the genesis of *Lonicera* and *Diervilla*, by Thomas Meehan.

Some physiological traits of the solid stemmed grasses and especially of Indian Corn (maize), by F. L. Stewart.

On the genus *Eleocharis* in America, by N. L. Britton.

On the tropical distribution of certain sedges, by N. L. Britton.

Notes on seedlings of *Elymus Virginicus*, by W. J. Beal.

Notes on Bird's Eye Maple, by W. J. Beal.

On the assumption of floral characters by axial growths in *Andromeda Catesbæi*, by Thomas Meehan.

On the significance of dioecism as illustrated by *Pycnanthemum*, by Thomas Meehan.

On the flora of New Jersey, by N. L. Britton.

Reserve food substances in twigs, by Byron D. Halsted.

Notes upon stamens of Solanaceæ, by Byron D. Halsted.

The new botanical laboratory of Barnard College, by N. L. Britton.

A bacterial disease of Carnations, by J. C. Arthur.

Grasses of Roan Mountain, by F. Lamson Scribner.

Revision of the United States species of *Fuirena*, by Fred. V. Coville.

A bacterial disease of Indian Corn, by T. J. Burrill.

An observation on *Calamintha Nuttallii*, by David F. Day.

Fermentation of Ensilage, by T. J. Burrill.

Modern Teaching Appliances in Biology, by R. R. Wright.

On a convenient method of subjecting living cells to Coloring Agents, by George L. Goodale. (Title).

The next meeting of the Association will be held at Indianapolis, and we are sure that it will give pleasure to the readers of the BULLETIN to learn that it will be under the presidency of Professor George Lincoln Goodale.

### Botanical Notes.

*The University of Pennsylvania* has recently issued a large octavo volume entitled "Handbook of Information concerning the School of Biology," giving full accounts of the advantages offered by that institution for the study of the Natural Sciences. The claim is made "that Philadelphia is better suited for the pursuit of biological study than almost any other American city," and it would certainly appear from the volume before us that the faculty of this School of Biology will substantiate the statement.

*Greeneria fuliginea in Italy.* In a recent issue of the "Nuovo Giornale Botanico Italiano" (Vol. xx. 441), record is made of the occurrence of this fungus of the vine in Vittorio, northern Italy, where it is also stated that the parasite had hitherto been unknown except in the United States.

*Memoirs of the Club.* Vol. i, No. 2, of the Memoirs, containing Mr. Martindale's paper on "Marine Algæ of the New Jersey Coast and adjacent waters of Staten Island," is ready for distribution to members and subscribers.

### Reviews of Foreign Literature.

#### *Germination of Lichens on Moss Protonema.*

In the "Revue Générale de Botanique" for April, 1889, M. Gaston Bonnier gives a continuation of his researches on the synthesis of lichens and their germination on the protonema of mosses, the first portion of which was reviewed by Miss Gregory in the January BULLETIN. M. Bonnier adds no new species of mosses to those already enumerated, but illustrates his paper by a colored plate showing in fig. 1 the green protonema of *Dicra-*